

Chapter Seven: Reasonably Foreseeable Fiscal Effects and Effects on Municipalities and Communities

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Chapter Seven: Reasonably Foreseeable Fiscal Effects and Effects on Municipalities and Communities

This chapter describes how activities that might result from this Cook Inlet Areawide lease sale could impact communities and municipalities in and near the area considered in this finding and discusses the possible distribution of potential fiscal benefits to the state and local areas. The sections in this chapter assess the possible socio-economic and fiscal effects the sale would have if leasing, exploration, development and production were to take place. Current and historic uses of the region are described in Chapter Four. Cumulative effects of oil and gas leasing on fish, wildlife, habitats are discussed in Chapter Six. Chapter Six also includes a technical description of the post lease sale oil and gas phases, and describes the historical pattern of oil and gas exploration and development in Cook Inlet.

A. Effects of Municipalities and Communities

The lease sale area includes acreage within the boundaries of the Matanuska-Susitna Borough, the Municipality of Anchorage, and the Kenai Peninsula Borough. Communities in or near the sale area are Talkeetna, Willow, Houston, Wasilla, Palmer, Beluga, Tyonek, Hope, Nikiski, Seldovia, Kenai, Ridgeway, Soldotna, Sterling, Kalifornsky, Kasilof, Coho, Clam Gulch, Ninilchik, Happy Valley, Nikolaevsk, Anchor Point, Homer, Kachemak, Fritz Creek, Fox River, Halibut Cove, Jakolof Bay, Seldovia, Port Graham, and Nanwalek.

Most communities in the sale area are connected by road to Anchorage with the exception of Beluga and Tyonek on the west side of the inlet, and Skwentna to the north. Halibut Cove, Jakolof Bay, Seldovia, Port Graham, and Nanwalek, on the southern shores of Kachemak Bay, are included in this analysis due to their dependence on Cook Inlet's marine environment. Richardson, Glenn, Sterling, and Seward highway communities are included because of their proximity to the sale area and possible economic activities associated with the oil and gas industry. Upper Turnagain arm communities are less affected because of the non-navigability of the waterway, although some post-sale interactions, such as possible increased truck traffic along the Seward Highway, may occur.

Oil and gas activities may cause changes to key indicators of the quality of people's lives. These indicators include household or per capita income, occupancy or rental rates, or population density. However, intervening factors, such as overall population growth in the area, make it impossible to measure or predict such changes. Effects could include a change in employment opportunities, an influx of cash to communities near any new development that might occur, or an increased demand for community and borough services, like sanitation, police protection or road maintenance.

1. Public Services

Three established boroughs, MSB, MOA and KPB, provide most of the public services to the cities within their boundaries, so the impact to those city governments is likely to be minimal. The services that borough governments provide to residents of the sale area include health care facilities, emergency medical services, public education, electricity, housing assistance, and public works. New exploration and development activities might require labor and capital-intensive infrastructure. Many of these facilities are already present in the sale area; however, some portions of the area considered in this finding currently do not have this infrastructure. An increased presence of oilfield workers may increase the demand for some public

services, like housing or sanitation. New exploration and development projects undertaken in areas away from existing infrastructure would have to be self-sufficient operations. If located near existing communities, such activities might place additional burdens on nearby community facilities. Since the existence of new developments is unknown at this time, it is not possible to predict the impact on community services.

Some oil and gas projects may require a source of electricity or water. A lessee may provide their own water or electricity or may utilize those of a local community. The suitability of an existing community utility would depend on the specific project proposed, its location, and the existing supply and demand for the service. It would also depend on the ownership structure of the utility and whether the facility had the capacity to accommodate industrial demand. New development may require a new or expanded utility.

2. Land Use

The physical effects of industry activities that may effect boroughs and municipalities land use include vegetation loss, siltation, sedimentation, water quality changes, noise or increases in human congestion. The possible effects on wildlife, habitat, cultural resources and other related resources are discussed in Chapter Six. The cumulative effect of surface impacts on a particular community depends on the location, frequency and duration of those physical effects, which cannot be accurately predicted prior to the proposal of a specific activity.

Effects due to physical alterations of the environment would be directly related to the number of exploration, delineation and production drill sites, and those numbers depend on the size, extent, location, and recoverability of discovered reserves. The siting of possible drill sites depends on factors including geology, costs, the presence of an existing road system, and land ownership and management. The extent of effects would also be related to the proximity of development sites to important habitats, especially habitat zones that support more than one human activity, like the Kenai River.

Communities adjacent to exploration activities may experience increased use of transportation systems, such as air charter services, airstrips, docks or roads for transportation of personnel or construction equipment. Oil produced would most likely be transported by pipeline (See Chapter Five, “Likely Methods of Oil and Gas Transportation”).

Proximity to existing transportation, storage, and refining facilities is a major consideration in petroleum development planning, especially if a discovered field is considered economic. Logistical constraints and environmental parameters also affect decisions on locating post-exploration phase operations. Field development would take place relatively close to discoveries, and facilities would likely be sited near wells. Exploration and development activities, including construction, probably would not be readily visible outside of the area. Most environmental and physical effects are discussed in the cumulative effects section in Chapter Six of this finding.

The greatest impacts of post-lease sale activity have occurred from crude oil spills. A major spill in Cook Inlet would likely have significant effects in all communities in the proposed sale area and generate the most impacts in fishing related or subsistence based economies, such as Tyonek, Port Graham or Nanwalek. Most spills are small, however, and the risk of a large spill, like the *Exxon Valdez* spill, is not likely to increase as a result of the proposed lease sale. See Chapter Five for a discussion on spill risk, preparedness, response and cleanup.

Communities on existing road systems which may be exposed to direct effects of activities if exploration or development were to proceed may include Sterling, Ninilchik, Anchor Point and Nikolaevsk, as well as residents of the Anchor, Chakok, and Beaver River drainages on the Kenai Peninsula and all of the

communities between Anchorage and Houston along the Glenn and Parks Highways. Some tracts could be developed from existing roads or access routes that crisscross the uplands. However, much of the onshore acreage is remote from existing infrastructure, and larger reserves are required to justify the planning, permitting, and construction of a major development site and airstrip off the existing road system. Environmental impacts from gravel drilling pads and roads must be minimized under the Cook Inlet Areawide Sale mitigation measures (see Chapter Nine).

Development of the area could adversely affect human uses of the area and its biological resources if access to hunting, fishing, or trapping areas is restricted or if industry activities occur at the same place and time as these activities. Use of the area by local residents will be unrestricted, except when required within a radius of 1,500 feet or less of onshore facilities or structures. Effects on subsistence activities, including hunting and fishing, are discussed in Chapter Six.

It is also possible that a proposed activity (especially the building of additional permanent roads) could allow for easier access to private property. The resultant increase in human presence on these lands could have negative impacts on traditional and recreational use. Conversely, development of the area could actually increase public access for users of the area's resources. If roads were constructed across general state lands, they would be open to the public and available for multiple use activities. If development occurs, consolidation of petroleum facilities would reduce conflicts with recreation uses of the area. Consolidation benefits both the public and industry. The "visual, environmental, social, and economic effects are concentrated," and projects are "less complicated and less costly" (ADCRA 1978:31).

3. Employment

Local communities may provide some labor needs if projects are proposed, approved, and developed within a reasonable commuting distance. Locally owned and operated oilfield support companies may also provide services to lessees or operators and may hire additional staff to meet the increased workload. Local contracts for resources and services, such as gravel and road construction might stimulate the local economy.

Almost all communities in the Southcentral region of Alaska have residents employed in the oil and gas industry. The communities of Anchorage, Kenai, Nikiski, and Soldotna currently provide most of the labor needed for existing Cook Inlet oil and gas development activities. The labor force is supported by existing production, such as from the Swanson River, McArthur River, and Trading Bay oil fields; and the Beluga, Kenai, and Cannery Loop gas fields. On the west side of the Inlet, development has been more extensive, but due to a lack of access and relatively small population, effects on local employment have been minimal. Some exploration activity has occurred in the northern portion of the proposed sale area and the southern portion of the Kenai Peninsula, but there is no development in these areas. The North Fork Gas Field Unit, located north of Homer, has yet to be developed. Enstar is negotiating with Gas-Pro to bring North Fork gas to Homer via a pipeline along the Sterling Highway. Test drilling is being planned to determine if the North Fork field can be a reliable, long-term source of gas (Homer News, 1998). The Falls Creek Gas Field Unit near Clam Gulch was formed in 1960 and until recently, has seen little activity.

This Cook Inlet Areawide sale may create some new employment opportunities in the oil and gas, service, transportation, utilities, and retail sectors of the local economy. This could offset job losses that have occurred in Southcentral Alaska due to declining Cook Inlet oil production. Short-term job opportunities could arise during the exploration phase. The long-term employment benefits of this sale on the MSB, KPB, MOA and local communities will depend on the subsequent production of commercial quantities of petroleum.

An influx of workers from outside Alaska as a result of this proposed sale is unlikely. As existing Cook Inlet fields decline, more and more of the current resident labor pool and service support industry will be in need of employment. Local labor supplies in the proposed sale area communities may not be able to meet demand for some technical positions. However lessees are, through Measure 12, encouraged to employ local and Alaska residents and contractors. Local businesses, such as charter operators, marine parts distributors, heavy equipment operators, welders, plumbers and pipefitters, carpenters, vendors, food service providers, and air carriers could provide support for both onshore and offshore oil and gas activities. Competition for available labor would be highest in the transportation, retail, wholesale, and service sectors of the regional economy during the summer months when tourism, sport fishing, and commercial fishing industries are most active and employing workers for the season. Construction activities could occur during both summer and winter months.

Mitigation Measures and Lessee Advisories

Below are summaries of some applicable mitigation measures, lessee advisories, and other regulatory requirements that would limit potential impacts to communities in and near the sale area. See Chapter Nine for a complete, full text listing of mitigation measures.

- Increased employment opportunities -- Lessees are encouraged to employ local and Alaska residents and contractors.
- Compliance with coastal management plans -- all activities must be reviewed for consistency with the approved state and district coastal management program standards.
- Unrestricted public access -- public access to the leased land is restricted only within 1,500 feet or less of onshore drill sites, buildings, and other related structures.
- Local involvement -- Lessees must include in their seismic permit applications a plan for notifying the public of their activities. In populated areas where there is no local planning and zoning, ADNR may require in approval of plans of operation that permanent structures be designed to be compatible with the aesthetics of the surrounding area.
- Disturbance -- Lessees will minimize sight and sound impacts for new facilities sited less than one-half mile from river banks and in areas of high recreational use by (1) providing natural buffers and screening to conceal facilities; (2) conducting exploration operations between October 1 and April 30; and (3) using alternative techniques to minimize impacts.
- Plan of Operations -- Plans of operation submitted for review and approval must describe the lessee's efforts to communicate with local communities, and interested local community groups in the development of such plans. When activities are proposed on non-state owned land, lessees must submit a copy of their plan of operations to private surface owners. Operations plans must describe efforts to minimize impacts on residential areas and privately-owned surface lands.
- Sensitivity training -- Lessees must include a personnel training program in all plans of operations designed to inform each person working on the job of environmental, social, and cultural concerns which relate to the individual's job. Programs must be designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.

If projects are in the vicinity of a city, some borough or city staff may need to participate in wildlife studies, peer reviews, or community outreach programs sponsored by lessees if the proposed project has the potential to impact natural resources or local employment levels in the borough's or city's immediate vicinity.

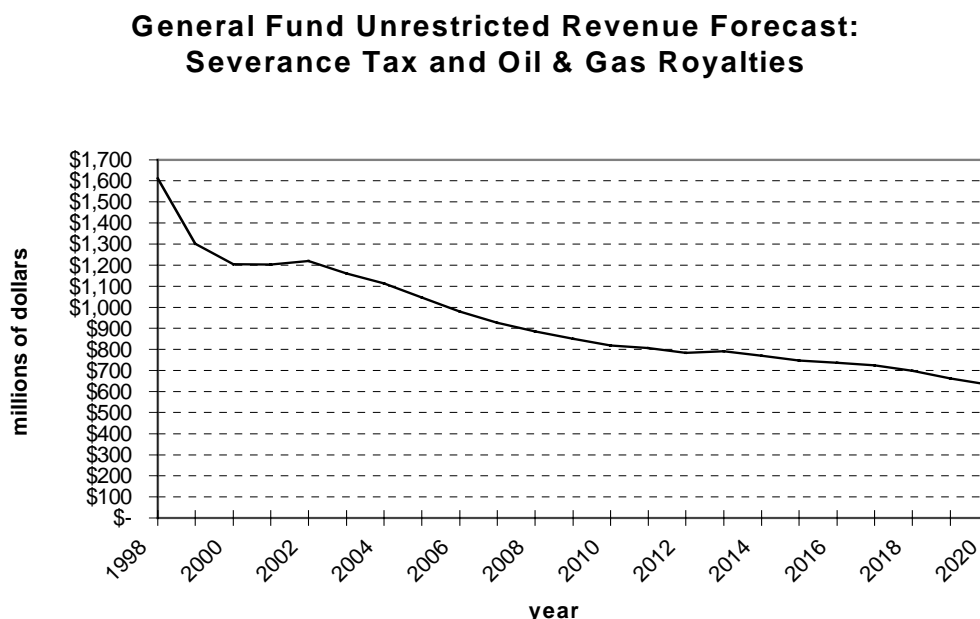
B. Fiscal Effects

Alaska's economy depends heavily on oil and gas revenues and the resultant government spending. Long term goals that drive resource development strategies include maintaining economic stability, providing the means for sustainable economic growth and improving and maintaining public services for the state. To reach those goals, the primary objectives of the oil and gas leasing program include the generation of state revenue and employment opportunity.

Petroleum revenue comes in the form of: (1) severance (or production) taxes; (2) oil and gas royalties on state and federal land; (3) petroleum corporation income tax; (4) petroleum property tax; and (5) petroleum rents and lease bonuses. The majority of the state's petroleum revenue comes from the Alaska North Slope, which generated 96 percent of total petroleum revenue in FY 1997 (ADOR, 1998).

The primary source of state revenues is North Slope oil production. Oil and gas reserves are finite resources, and North Slope production is declining. North Slope fields hold 98 percent of the states known oil reserves and 90 percent of the state's known gas reserves. In fiscal year (FY) 1998 (July 1997 through June 1998), General Fund unrestricted revenue amounted to approximately \$ 2.5 billion. \$1.9 billion came from petroleum. ADOR anticipates that revenues will decline as production declines and oil prices fluctuate. In FY 1997, petroleum revenue made up 81 percent of the total General Fund unrestricted revenue. It is anticipated that petroleum revenue will continue to comprise the majority of Alaska's General Fund unrestricted revenue: 74 percent in FY 1998, 74 percent in FY 1999 and 75 percent in FY 2000 (ADOR, 1998). North Slope oil production has declined by approximately 700,000 barrels of oil per day (bpd) from its peak of approximately 2.0 million bpd in 1988 to an estimated average of 1.28 million bpd in fiscal year 1998. The overall decline will accelerate, and production is expected to fall to 1112 million by 2005 and to 431 thousand bpd in 2019. Annual production from Cook Inlet fields has been declining for many years. Cook Inlet production now averages approximately 32,000 bpd, down from a peak of 227,200 bpd average in 1970. These declines in oil production cause corresponding decreases in related revenues and seriously impact state government income and spending. Regardless of the price of crude oil general fund receipts will continue to decline (see figure 7.1).

Figure 7.1 Petroleum Severance Tax and Royalty Revenue Forecast



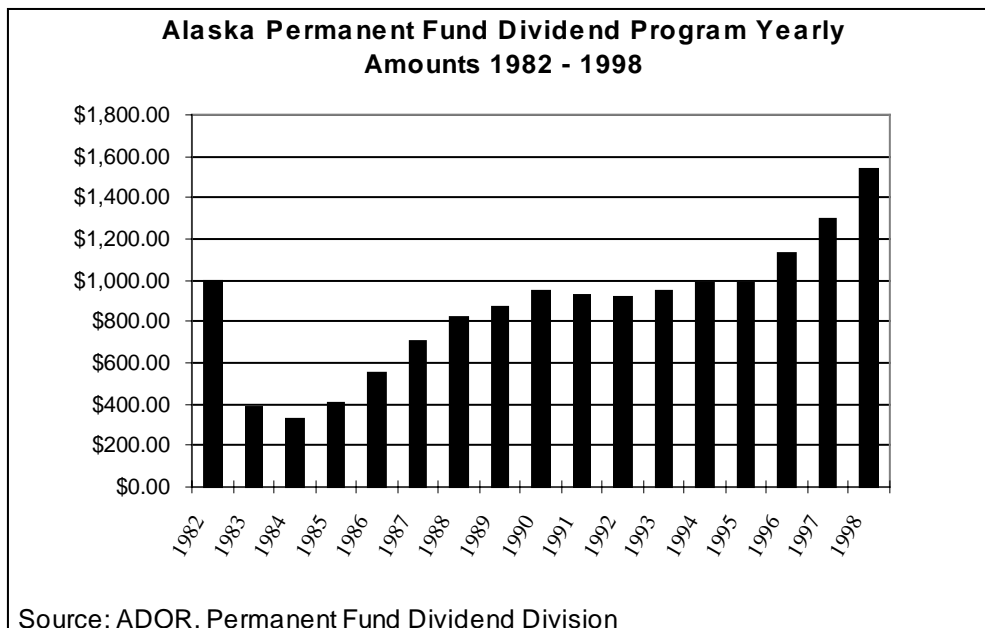
Source: ADOR, 1998

The projected decline in state government revenue will have a negative effect on future government services, employment, personal income, revenue to local governments, and population growth. It is anticipated that employment growth will fail to keep pace with natural population increases for the next 30 years. Declines in petroleum-related industries will tend to offset gradual gains in non-petroleum industries resulting in very slow growth and a stagnant economic environment. Assuming no significant changes in the present economic outlook, employment growth in Alaska will average one percent annually for the next 30 years. This compares with annual averages of more than four percent since 1961 and about three percent since 1980. “This trend suggests significant out-migration by many Alaskans, particularly younger, better educated persons seeking improved opportunities for jobs and careers elsewhere.” (AOGPC, 1995:1)

The Alaska Permanent Fund

The Alaska Permanent Fund was established by ballot proposition in 1976. Twenty-five percent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments, and bonuses received by the state on lands leased prior to December 7, 1979 are placed in the permanent fund. For lands leased after this date, 50 percent of the revenues go in to the permanent fund. All qualified Alaskans who apply, receive an annual dividend from the earnings of the permanent fund. In 1998, every qualified man, woman, and child in Alaska received a dividend check of \$1540.88. The PFD is an equitable benefit transfer because it reaches every individual regardless of income or socio-economic status (See figure 7.2).

Figure 7.2 Alaska Permanent Fund Dividend Program Yearly Amounts 1992-1998



1. Statewide Effects

The state spends the general fund to pay for road building and maintenance, school maintenance and construction, airports, ferry systems, police protection, courts, public buildings, and for entitlement programs, family assistance programs, longevity bonus payments, unemployment compensation insurance, aid to families with dependent children, small business assistance, housing and student loan programs, power cost subsidies, and many other public services.

One of the primary potential statewide fiscal effects of a lease sale on the state budget is increased revenue from oil and gas lease bonus bids, rentals, and royalties; production taxes; and corporate income taxes. Bonus payments, rentals, and to a certain extent, corporate income taxes are generated for each lease sold, regardless of whether a discovery is ever made or production is ever established.

1. **Bonus Payments.** These are the amounts paid by winning bidders for the individual tract lease at a lease sale. Since 1959, 5,124 tracts have been sold, generating more than \$2 billion in bonus bid income to the state (ADNR, 1999).
2. **Rentals.** Each lease requires an annual rental payment. The first year rent is \$1.00 per acre or fraction of an acre, and the rent increases in 50¢ increments to \$3.00 per acre or fraction of an acre in the fifth and all following years of the lease. The lessee must pay the rent in advance and receives a credit on the royalty due under the lease for that year equal to the rental amount. Rental income for fiscal year 1998 amounted to \$4.9 million.
3. **Royalties** represent the state's share of the production as the mineral interest owner. Royalty payments provided over \$790 million in revenue to the state in 1998
4. **Production taxes.** All producers must pay tax on all taxable oil and gas produced from each lease or property in the state on a percentage-of-gross value basis. For fiscal year 1998, oil and gas production taxes were \$607 million.
5. **Income taxes.** All corporations in the state must pay corporate income tax for all taxable income derived from sources within the state. Special provisions apply to apportioning total income worldwide for corporations involved in producing or transporting oil and gas. Most, if not all, producers and transporters of oil and gas in Alaska are corporations. For fiscal year 1998, oil and gas corporation taxes were \$185 million.

Revenues from the development of the state's oil and gas resources finance the state's revenue sharing, municipal assistance, education funding, operating budget and capital budget. The general populace experiences an indirect effect because state spending supports nearly one out of every three jobs, and three of every ten dollars of personal income result from state spending (ISER 1990:1). Also, nearly one of every two local government jobs (including school district jobs) in Alaska relies on state funding (Ibid.: 4). Furthermore, the total economic effect of any spending, including state government spending and salaries paid to private oil and gas industry employees, will be greater than the direct effect. When money is re-spent in the economy, its original value multiplies. For example, this "income multiplier" is calculated at 1.35 for state spending. This means that for every dollar of income Alaskans receive directly from state spending, an additional 35¢ of income is generated when that dollar is re-spent in the local economy (ISER 1995:1).

Given the overall low to moderate petroleum potential in the sale area (described in Chapter Two), the potential for additional revenue is unknown. ADNR does not know how many and which tracts will be leased.

The bonus bid amounts can vary considerably from tract to tract. Thus, it is not possible to calculate any reasonable estimate of bonus bid revenues for this sale even based on historical averages. Bonus bid and rentals payments are revenue the state would receive regardless of whether there is any development occurring as a result of this sale. Royalties, production taxes and, to a large extent, corporate income taxes are dependent on the discovery of new reserves during the exploration phase and the production of these reserves during the development phase.

2. Local Effects

As previously stated, the only revenue received as a direct result of a lease sale may be bonus bids and rental payments on tracts that are actually leased. Fifty percent of these payments go directly into the state General and School funds. Moneys from these funds are allocated to all boroughs and municipalities through municipal assistance, revenue sharing, community development grants, special operating grants, capital project funding, and kindergarten through twelfth grade education. The General Fund pays for a portion of other public services and capital projects, such as community centers, medical clinics, recreation complexes, habitat enhancement, parks and recreation, public waste disposal sites, and public sewer and water systems. General fund revenues are often allocated to local governments based on population size and cost of living estimates. Population calculations are derived from permanent fund dividend applications and IRS tax returns.

In addition to General Fund contributions like production taxes and royalties, oil and gas exploration, development and production activities produce ancillary economic activity. These activities generate benefits to individuals in terms of employment and income opportunities and to communities through local taxes and enterprises.

This Cook Inlet Areawide sale may stimulate new employment opportunities at a local level in the oil industry. This could offset the job losses that have occurred on the Kenai Peninsula as a result of declining production. Year-round positions in any industry held by local residents help to stabilize the local revenue base. Resident hire rates for the oil and gas industry in Alaska is higher than for other industries such as fishing, fish processing, and timber (ADOL, 1998:5).

Workers in several sectors of the economy could be involved in activities that might occur as a result of the lease sale, including mining, construction, petroleum product manufacturing, transportation, and retail trade. Many workers trained in oil industry skills live on the Kenai Peninsula and in the Anchorage and Mat-Su areas. They could commute to jobs on projects that might develop in the area. Some administrative and other support jobs for these projects could be located in Anchorage and elsewhere in Alaska. Increased employment and incomes in the oil industry may also stimulate increases in the retail trade, finance, insurance, real estate, government sectors, and housing construction industry.

However, seasonal employees and non-resident workers can also create an increased demand for public services like health, education, public safety, and road and parks maintenance. Communities may experience costs associated with exploration and development activities in terms of increased demands for these services without any corresponding increase in state general fund allocations, since seasonal employees and non-residents would not be considered when state revenue sharing or fund allocations are made.

3. Effects of Industry Investment

Industry investment also has an impact on the Alaska economy. The amount that industry invests depends on the expected return on each dollar invested. Projects in Alaska often compete with projects in other parts of the world for the same investment dollars. The lower the investment dollar per barrel of recoverable reserves, the higher the likelihood that project expenditures will be made. A project's

development costs plus the costs of production over the life of the field are estimated and compared to the total volume of recoverable reserves. An estimate of the price per barrel is selected, and return on investment dollar is calculated by the lessee. If the return rate is high enough, then the project commences, oil or gas is produced, and oil royalties and production taxes are realized.

Investment dollars go into three basic spending categories: labor (including wages and salaries paid to workers and contractors), equipment and supplies, and services. Oil and gas firms contract with other firms for goods and services, some of which can be obtained from Alaska vendors, while others are contracted out of state. Direct expenditures in turn generate other indirect expenditures in the economy.

Table 7.1 Distribution of Direct and Indirect Industry Expenditures

Industry	Remote Field Development	Remote Exploration
Manufacturing	34%	17%
Transportation	10%	6%
Services	20%	16%
Construction & Other	7%	34%
Communication	7%	9%
Trade	10%	8%
Finance, Insurance & Real Estate	12%	11%

From: AOGPC, 1995

The number of tracts that will be leased in a particular sale is impossible to predict, because of the competitive nature of the leasing process. Exploration and development expenditure levels vary by project. Expenditure patterns depend on the type of project, such as remote or marginal field development or remote exploration. A remote field development project would spend a higher proportion of total costs on transportation services and road or pad construction. Estimates (used by the Alaska Oil and Gas Policy Council for an input-output model of the state's economy) based on survey data indicate that up to 80 percent of exploration and production expenses are made in-state, while appraisal, remote development, marginal development, and enhanced oil recovery expenditures rely more on out-of-state contractors (AOGPC, 1995:35). For example, if the average cost to drill a well was \$2.5 million, then about two million dollars would likely be spent in-state on that well.

The remote field scenario in the AOGPC study involves an extensive amount of exploration activity. "Historical data indicate that approximately 25 wells would be required to discover a remote field large enough to support the necessary infrastructure and be commercially viable." (AOGPC, 1995:32) Production activities require more services and less construction than exploration and development scenarios. Direct and indirect expenditures by category for typical project scenarios from AOGPC are in Table 7.1.

C. Summary

Most direct effects on communities and municipalities are likely to be temporary and localized and would depend on the location, frequency and duration of post-lease activities. Potential negative effects include temporary and localized disturbance, increased road use and noise disturbance to residents from construction or drilling activity. Disturbance might be highest during exploration and development phase activities in contrast to production, which is less labor intensive.

The reasonably foreseeable effects of this Cook Inlet Areawide lease sale on communities depend on the size, extent, location, and recoverability of discovered oil or gas reserves. Reasonably foreseeable effects on communities, municipalities and boroughs from this sale and subsequent activities may include changes to

key factors affecting peoples lives, such as changes to local revenue sources, availability of water, electricity, roads, sewer, and changes in land use patterns. However, other forces like rapid population growth or increased human pressure on rivers in the sale area may occur regardless of industry activities. Public services currently experiencing increases in demand include health care, police, fire, refuse collection, sanitary facilities, road maintenance, and parks maintenance.

Potential Effects on Municipalities and Communities

- Demand for some public services may increase
- Unemployment may decrease
- Property, oil and gas property and sales taxes may increase
- Utility infrastructure may be expanded
- General & Permanent fund revenues may increase
- Construction may disturb nearby residents at project sites
- Increased road use

Given that only some tracts may eventually produce oil or gas, this lease sale would most likely provide direct economic benefits to the state in the form of revenue from bonus bids and lease rentals. These revenues, in turn, would trickle down to the local communities through state revenue sharing and fund allocations. Other benefits depend on the level of exploration effort and on the success ratio of exploration to discovery. The most measurable potential beneficial effects of oil and gas activities are: (1) increased earnings to the state General Fund and Permanent Fund; (2) increased local property and sales tax revenues; (3) increased employment opportunities for Alaskans and local revenue circulation from ancillary (industrial support) service demands. These effects cannot be estimated prior to the lease sale due to a number of unknowns. ADNRR cannot reasonably estimate the number of leases that will be issued, nor the amounts of the bonus bids that will be paid on leases, nor whether oil is actually present in quantities that are economically viable to produce.

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